

Fort Stewart/Hunter Army Airfield  
Post Construction Stormwater Management Guidance  
For New Development and Redevelopment

1. Stormwater Management Plans (SWMP)

All development activity which is greater than 5,000 square feet and/or are required to submit a Notice of Intent for National Pollutant Discharge Elimination System Permitting Requirements for Construction and Land Disturbance Activity on FS/HAAF shall have an approved Stormwater Management Plan (SWMP). A SWMP shall be valid for one year from the date of approval by the Directorate of Public Works (DPW) Environmental Division. The minimum design requirements for the SWMP shall include the following:

1.1.1 Utilization of Better Site Design Practices for Stormwater Management

All site designs shall implement a combination of approaches collectively known as stormwater better site design practices, as described in the Georgia Stormwater Management Manual (SWMM)-Coastal Stormwater Supplement (CSS) and the United States Environmental Protection Agency (USEPA) Technical Guidance for EISA-2007 Section 438 Implementation-DEC 2009. All sites shall also be designed to conform to the Energy Independence and Security Act (EISA) 2007 Section 438 with utilization of the USEPA Technical Guidance in conjunction with the CSS, to meet standards, contained herein.

Such practices include conservation of natural features, use of Low Impact Development (LID) techniques for site design, reduction of impervious cover, and utilization of natural features for stormwater management.

1.1.2 Stormwater Runoff Quality

All stormwater runoff generated from a site shall be adequately treated before discharge. Stormwater management systems (which can include both structural stormwater controls and better site design practices) must be designed to remove 80% of the calculated average annual post-development total suspended solids (TSS) load and be able to meet any other additional watershed- or site-specific water quality requirements. A stormwater management system complies with this performance standard if:

a. It is sized to capture and treat the prescribed water quality treatment volume, which is defined as the stormwater runoff volume resulting from the 95<sup>th</sup> percentile rain event of a site as required under the USEPA Technical Guidance for EISA-2007 Section 438 Implementation-DEC 2009;

b. Appropriate structural stormwater controls are selected, designed, constructed, and maintained according to the specified criteria in the GA SWMM/CSS and the USEPA Tech Guidance EISA Section 438-DEC 2009; and

c. Runoff from hotspot land uses and activities [such as, industrial activities and/or fueling

operations] is adequately treated and addressed through the use of appropriate structural stormwater controls and pollution prevention practices.

### 1.1.3 Stream Channel and Aquatic Resource Protection

Stream channel protection shall be provided to both downstream and on-site channels by utilizing all of the following three approaches:

- a. 24-hour extended detention storage of the 1-year, 24-hour return frequency storm event.
- b. Erosion prevention measures such as energy dissipation and velocity control, as referenced in Section 4.5 of Volume 2 of the Georgia Stormwater Management Manual; and Chapter 4 Section 4.4.3 of the Coastal Stormwater Supplement.
- c. Preservation of the applicable stream buffer a minimum of 25 feet.

This requirement may be waived for sites that discharge directly into piped stormwater drainage systems, larger streams, creeks, rivers, or wetlands where the reduction in flows will not have an impact on channel integrity.

### 1.1.4 Overbank Flood Protection

Downstream overbank flood protection shall be provided by controlling the post-development peak discharge rate to the pre-development rate for the 2-year through the 50-year, 24-hour return frequency storm event, as referenced in Section 4.5 of Volume 2 of the Georgia Stormwater Management Manual; and Chapter 4 Section 4.4.4 of the Coastal Stormwater Supplement. This requirement does not apply provided the following:

- a. The development directly discharges into open waters; or
- b. Provisions are made to provide a conveyance system with adequate capacity to carry stormwater flows to open waters.

### 1.1.5 Flood Plain Protection

The Federal Emergency Management Agency defines floodplains as areas subject to a one percent or greater chance of flooding in any given year. Floodway encroachment, including structures, fill placement, etc... is prohibited unless certification with supporting technical data is provided by a registered professional engineer demonstrating that the encroachment will not result in any increase in flood elevations.

Flood plain protection shall be provided such that there is no increase in flood elevations, either upstream or downstream, for the 100-year, 24-hour return frequency storm event, as referenced in Section 4.5 of Volume 2 of the Georgia Stormwater Management Manual. Furthermore, any encroachments in the 100-year flood plain shall meet the requirements of the Chapter 4 Section 4.4.5 of the Coastal Stormwater Supplement, State Flood Damage Prevention requirements, and

the Executive Order #11988 Floodplain Management; which requires federal service agencies to avoid construction or management practices that will adversely affect floodplains, unless it is found that:

- a. There is no practical alternative, and
- b. The proposed action has been designed to minimize harm to or within the floodplain.

#### 1.1.6 Hydrologic Analysis

A hydrologic analysis, both upstream and downstream, shall be performed to determine the following:

- a. Adequate capacity of the receiving system.
- b. Whether there are any additional impacts in terms of peak flow increase or water elevations while meeting Minimum Standards (1.1.1) through (1.1.5), above.
- c. This analysis shall be performed at the outlet(s) of the site, and downstream at each tributary junction to the point(s) in the conveyance system where the area of the portion of the site draining into the system is less than or equal to 10% of the total drainage area above that point or to a point identified by the Division.

#### 1.1.7 Groundwater Recharge

Annual groundwater recharge rates shall be maintained to the maximum extent technically feasible through the use of nonstructural methods as described in the Georgia Stormwater Management Manual/Coastal Stormwater Supplement, and the USEPA Technical Guidance for Implementation of the EISA-2007 Section 438-DEC 2009.

- a. The annual recharge from the post-development site shall approximate the annual recharge from the pre-development, based on soil types.
- b. Stormwater runoff from a hotspot site [industrial and/or fueling operations] or land use shall not be infiltrated without effective pretreatment.

#### 1.1.8 Stormwater Management System Operation and Maintenance

The stormwater management system, including all structural stormwater controls and conveyances, shall have an operation and maintenance plan to ensure that it continues to function as designed. The operation and maintenance plan must provide:

- a. A stormwater system inspection and maintenance checklist (reference Appendix A), and expected life cycle for replacement of stormwater structural controls. The plan must include relevant contact information (phone number and address) for the original design engineer. The developer shall be responsible for all maintenance through the warranty period.

b. The routine and non-routine maintenance tasks to be undertaken.

c. A post construction schedule for inspection and maintenance of the stormwater structural controls for the DPW Environmental Division to perform as required. All records of inspection and maintenance must be maintained for each control for a period of five (5) years. These records must be available for review by the DPW Environmental Division at all times. Failure to maintain the records will be a violation of this Guidance.

d. Any necessary legally binding maintenance agreements. If the development or redevelopment includes a subdivision, there must be clear and concise note(s) referring to the operation and maintenance plan on the tenant's or property leasee. All agreements and plans must clearly specify that all property owners within the subdivision or tenant's property are responsible.

e. Estimated annual inspection, maintenance, and operating costs.

f. If any time the DPW Environmental Division determines that the plan is not effective, then the DPW Environmental Division may require changes as necessary to guarantee adequate operation of the stormwater management system.

g. Drainage structures internal to the proposed land development activity will be designed for the 25 year, 24 hour storm event. The SWMP must include a demonstration that none of the storm inlets will overtop during the 25 year storm event.

h. The SWMP shall include a Hydrologic/ Hydraulic Report prepared and certified by a Registered Professional Engineer licensed to practice engineering in the State of Georgia. The report shall be prepared in accordance with the standards of the Georgia Stormwater Management Manual-Coastal Stormwater Supplement and the USEPA Technical Guidance for Implementation of EISA-2007 Section 438-DEC 2009.

i. Land Disturbing Activities, such as timber harvest, demolition, grading, grubbing or development cannot be implemented until provisions of this stormwater guidance have been met.

j. Record Drawings of the Stormwater Management Facilities by a registered professional engineer are required, prior to turn over to the Government. Record Drawings shall be prepared in accordance with DPW Engineering and Master Planning Divisions Policies.

k. For development of a project in phases, a stormwater master plan is required to indicate how the requirements of this stormwater guidance will be met. This does not preclude the requirement of a SWMP for each phase as it is being developed. The master plan of multi-phased developments shall consolidate stormwater management facilities as much as practical.

## 2. Maintenance and Inspection

a. In no case can alterations be made to the stormwater management facilities which may

impact perpetual access for inspections of any stormwater management facility or BMP which is to be inspected by the DPW Environmental, or maintained by the DPW Services Division Operations & Maintenance, tenant organization, or lessee.

b. The DPW Environmental Division shall determine inspection schedules necessary to enforce the provisions of this guidance.

c. The DPW Environmental Division, bearing proper credentials and identification, shall be permitted to enter, in accordance with state and federal law, all properties for regular inspections, periodic investigations, observation, measurement, enforcement, sampling and testing, in accordance with provisions of this Guidance. The Director, Public Works or duly authorized designee DPW Environmental Division shall duly notify the owner of said property or the representative on site, except in the case of an emergency.

d. The DPW Environmental Division, bearing proper credentials and identification, shall be permitted to enter, in accordance with state and federal law, all properties for which the Fort Stewart/Hunter Army Airfield DPW holds a negotiated easement of tenant owned or leased properties for inspection, repairs, maintenance and other purposes related to any portion of the stormwater management facilities lying within said easements or leased lands.

e. Measurements, tests and analyses performed by the DPW Environmental Division or required of any discharger to the MS4 shall be in accordance with 40 CFR Part 136, unless another method is approved by GA EPD.

f. If, after inspection, the condition of a stormwater management facility presents an immediate danger to the public health, environment, or because of unsafe conditions or improper maintenance, the DPW Environmental Division, shall have the right to take action as may be necessary to protect the public and make the stormwater management facility safe.

g. If, after inspection, the condition of a tenant owned or leased lands stormwater management facility presents immediate danger to the public health, environment, or because of unsafe conditions or improper maintenance, the DPW Environmental Division, shall have the right to take action as may be necessary to protect the public and make the stormwater management facility safe.

h. If, after inspection, the condition of the stormwater management facility results in a violation of this Guidance, the DPW Environmental Division will notify the DPW Services Division Operations & Maintenance and/or the tenant owned or leased lands point of contact of the stormwater management facility of the violation and the corrections which were or will need to be implemented with timelines for completion.

## ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practice
CFR	Code of Federal Regulations
CWA	Clean Water Act
DPW	Directorate of Public Works
E&SC	Erosion & Sedimentation Control Act, 1975 [amended 2000]
EISA-2007	Energy Independence & Security Act- 2007-Section438
FS/HAAF	Fort Stewart/Hunter Army Airfield
GA	State of Georgia
GA EPD	Georgia Environmental Protection Division
GA WQC	Georgia Water Quality Control Act
GA SWMM/CSS	Georgia Stormwater Management Manual/Coastal Stormwater Supplement
Guidance	Construction Site Runoff Control and Post Construction Stormwater Management Guidance For New Development and Redevelopment
IDDE	Illicit Discharge Detection & Elimination Plan
MS4	Municipal Separate Storm Sewer Systems
NPDES	National Pollutant Discharge Detection Elimination Systems Permit
NSWD	Non-Stormwater Discharge
SWMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
USEPA Tech Guidance	United States Environmental Protection Agency Technical Guidance for Implementation of EISA-2007 Section 438

**APPENDIX A**  
**Fort Stewart/Hunter Army Airfield**  
**Stormwater System Maintenance-Inspection Checklist**

**Fort Stewart / Hunter Army Airfield  
Stormwater System Maintenance-Inspection Checklist**

Installation: Circle one Fort Stewart / Hunter Army Airfield

Collection System (MS4 sub basin) \_\_\_\_\_ BMP ID# \_\_\_\_\_ Associated Building #(s) \_\_\_\_\_

Location/GPS: Latitude: \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " N Longitude: \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " W

Proponent Responsible For Maintenance: DPW Services Division Roads & Grounds

Contact: DPW Environmental Branch Stormwater Program 767-2010 / 0271

Evaluation Date:

Evaluation Completed by:

Circle type of system: Retention/Wetland Pond - Detention Basin - Bioretention Cell - Rain Garden - Open Channel\*

\*Open Channel Type: Stream, Ditch, Swale, Catch Basin, Curb Inlet, Headwalls or Open Pipe

Findings	Yes	No	Maintenance Required?	Comments
<b>1. <u>Contributing Drainage Area.</u></b>				
a. Excessive trash / debris				
b. Bare / Exposed soil				
c. Evidence of erosion				
<b>2. <u>Inlets and Outlets</u></b> (headwalls, open pipes, outfall weirs, catch basins, curb inlets, etc...)				
a. Excessive sediment accumulation				
b. Structural defects				
c. Evidence of clogging				
d. Evidence of erosion				
<b>3. <u>Facility Condition.</u></b>				
a. Evidence of erosion				
b. Excessive sediment accumulation				
c. Exposed or bare soils				
d. Evidence of pollutants				
e. Presence of woody vegetation				
f. Evidence of dead vegetation				
g. Excessive trash/debris				
h. Evidence of standing water				

